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**United States Patent** [19][11] **Patent Number:** **5,369,992****Meng**[45] **Date of Patent:** **Dec. 6, 1994**[54] **SEAWATER MAGNETOHYDRODYNAMIC TEST APPARATUS**[75] **Inventor:** **James C. S. Meng**, Portsmouth, R.I.[73] **Assignee:** **The United States of America as represented by the Secretary of the Navy, Washington, D.C.**[21] **Appl. No.:** **16,328**[22] **Filed:** **Feb. 11, 1993**[51] **Int. Cl.:** ..... **G01M 10/00**[52] **U.S. Cl.:** ..... **73/148**[58] **Field of Search** ..... **73/148, 147, 168**[56] **References Cited****U.S. PATENT DOCUMENTS**4,380,170 4/1983 Dötzer et al. .... 73/148 X  
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Prithvi C. Lall; Michael F. Oglo[57] **ABSTRACT**

A magnetohydrodynamic test facility using a superconducting electromagnet to drive a hydrodynamic test loop is disclosed. The test facility has a pretreatment section for adjusting the salinity of seawater to be used in the flow loop a flow loop section having a test section, a magnetohydrodynamic pump, and a gas trap assembly to capture any gasses evolved from the seawater. A post-treatment section neutralizes evolved chlorine gasses.

**11 Claims, 3 Drawing Sheets**